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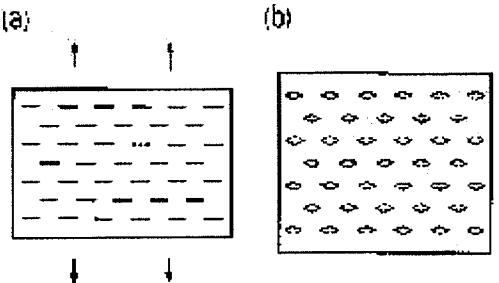
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## (54) BASE MATERIAL FOR CULTIVATED SKIN, CULTIVATED SKIN, AND METHOD OF MAKING IT

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To smoothly supply enough nutriments to cultivated epidermis cells and/or fibroblasts without any cells falling/removing when a collagen base material is seeded, and to smoothly discharge exuding liquid from the surface of a wound to which the cultivated skin is applied.

**SOLUTION:** The cultivated skin consists of a collagen base material which has through notches and fibroblasts/epidermis cells seeded/cultivated at least on one side of the collagen base material. If force is added in the directions to widen the notches at the time of application of the cultivated cells, through holes are formed at this time.



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**English translation of the Claims of the cited document 3**

**METHOD FOR PRODUCING THIN FILIM BY ELECTRODEPOSITION OF HIGH MOLECULAR ELECTROLYTE**

**[Claim(s)]**

[Claim 1] A method of producing a thin film electrochemically from an aqueous solution of high molecular electrolyte, comprising introducing the aqueous solution into an electrodepositon bath having at least one cathode and/or non-electrode cathodic electrodeposition plane and at least one anode and/or non-electrode anodic electrodeposition plane, applying direct current voltage between the cathode and the anode, and forming the thin film without containing bubbles at at least one predetermined electrode plane or non-electrode electrodeposition plane.

[Claim 2] The method of claim 1, characterized by that the electrode is comprised of porous conductive materials.

[Claim 3] The method of claim 1, characterized by that the non-electrode electrodeposition plane is comprised of semipermeable materials which is a combination of porous conductive materials and conductive materials.

As an example of an aqueous solution of high molecular electrolyte, collagen, casein, albumin, and keratin are included.

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**BASE MATERIAL FOR CULTURED SKIN, CULTURED SKIN, AND METHOD OF MAKING IT**

**Abstract:**

**PROBLEM TO BE SOLVED:** To provide a cultured skin which can smoothly supply enough nutriments to cultured/grown epidermis cells and/or fibroblasts without any cells falling/removing when seeded into a collagen base material, and smoothly discharge exuding liquid from the surface of a wound to which the cultured skin is applied.

**SOLUTION:** A collagen base material which has penetrated cuts, the cultured skin which comprises the collagen base material and fibroblasts/epidermis cells seeded/cultured at least on one side of the collagen base material, wherein penetrated holes are formed if force is added in the directions to widen the cuts at the time of application of the cultured cells, and the method of making it.

[Claim(s)]

[Claim 1] A base material for cultured skin which comprises the collagen sponge or the collagen sheet with which the penetrated cuts were provided.

[Claim 2] The base material for cultured skin according to claim 1, wherein collagen is atelocollagen.

[Claim 3] The base material for cultured skin according to claim 1 or 2, wherein the penetrated cut was provided regularly.

[Claim 4] The base material for cultured skin according to claim 1, 2, or 3, wherein the penetrated cut is a straight line-like, and was formed in the one direction.

[Claim 5] The base material for cultured skin according to claim 1, 2, 3, or 4, wherein the penetrated cut is at least partially provided in a 2.5cmx2.5cm square in the base material for cultured skin, and the cut which exceeds length of 4cm in total for a 1cmx1cm square is not included.

[Claim 6] A cultured skin which comprises a cell of the skin origin by which seeding culture was carried out and the base material for cultured skin which comprises the collagen sponge or the collagen sheet with which the penetrated cuts were provided.

[Claim 7] A cultured skin which comprises the base material for cultured skin which comprises the collagen sponge or the collagen sheet with which the penetrated cuts were provided, and the fibroblast of the skin origin by which seeding culture was carried out at least one side of the base material, wherein the penetrated holes can be provided by applying the force so that said cut is opened at the time of culture skin application.

[Claim 8] A cultured skin which comprises the base material for cultured skin which comprises the collagen sponge or the collagen sheet with which the penetrated cuts were provided, and the epidermal cell by which seeding culture was carried out at one side of the base material, wherein the penetrated holes can be produced by applying the force so that said cut is opened at the time of culture skin application.

[Claim 9] A cultured skin which comprises the base material for cultured skin which comprises the collagen sponge or the collagen sheet with which the penetrated cuts were provided, the fibroblast of the skin origin by which seeding culture was carried out at one side of the base material, and the epidermal cell of the skin origin by which seeding culture was carried out at least one side of the base material, wherein the penetrated holes can be produced by applying the force so that said cut is opened at the time of culture skin application.

[Claim 10] The cultured skin according to claim 6, 7, 8, or 9, wherein collagen is atelocollagen.

[Claim 11] The cultured skin according to claim 6, 7, 8, 9, or 10, wherein the penetrated cut was prepared regularly.

[Claim 12] The cultured skin according to claim 6, 7, 8, 9, 10, or 11, wherein the penetrated cut was provided in the one direction in the shape of a straight

line-like, and a penetrated holes can be produced by applying the force so that the cut is opened.

[Claim 13] The cultured skin according to claim 6, 7, 8, 9, 10, 11, or 12, wherein the penetrated cut is at least partially provided in a 2.5cmx2.5cm square in the base material for cultured skin, and the penetrated cut which exceeds length of 4cm in total for a 1cmx1cm square is not included.

[Claim 14] A manufacturing method of cultured skin, comprising a) providing the penetrated cuts with the base material for cultured skin which comprises collagen sponge or a collagen sheet, and b) carrying out seeding culture of the fibroblast of the skin origin at least at one side of the base material with the cuts closed.

[Claim 15] A manufacturing method of cultured skin, comprising a) providing the penetrated cuts with the base material for cultured skin which comprises collagen sponge or a collagen sheet, and b) carrying out seeding culture of the epidermal cell at one side of the base material with the cuts closed.

[Claim 16] A manufacturing method of cultured skin, comprising a) providing the penetrated cuts with the base material for cultured skin which comprises collagen sponge or a collagen sheet, and b) carrying out seeding culture of the fibroblast of the skin origin at least at one side of this base material, and carrying out seeding culture of the epidermal cell at one side of the base material with the cuts closed.

[Claim 17] The manufacturing method according to claim 14, 15, or 16, wherein collagen is atelocollagen.

[Claim 18] The manufacturing method according to claim 14, 15, 16, or 17, wherein the penetrated cuts are provided regularly.

[Claim 19] The manufacturing method according to claim 14, 15, 16, 17, or 18, wherein the penetrated cuts were provided in the one direction in the shape of a straight line, and penetrated holes can be produced by applying the force so that cut is opened.

[Claim 20] The manufacturing method according to claim 14, 15, 16, 17, 18, or 19, wherein the penetrated cut is at least partially provided in a 2.5cmx2.5cm square in the base material for cultured skin, and the cut which exceeds length of 4cm in total for a 1cmx1cm square is not included.

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#### SUSTAINED RELEASE INJECTION FOR LOCAL ANESTHESIA

##### Abstract:

PURPOSE: To provide a sustained-release injection for local anesthesia capable of maintaining a nerve block for a long period of time by sustaining the release of local anesthetic and keeping a treating effect.

CONSTITUTION: A sustained-release injection for local anesthesia characterized by containing a local anesthetics such as lidocaine